



ANNUAL REPORT
OF THE
COMMISSIONER'S OF INLAND FISHERIES
1914





State of Rhode Island and Providence Plantations

FORTY-FIFTH ANNUAL REPORT

OF THE

COMMISSIONERS OF INLAND
FISHERIES

MADE TO THE

GENERAL ASSEMBLY

AT ITS

January Session, 1915

PROVIDENCE:

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1915





7022

COMMISSIONERS OF INLAND FISHERIES.

CHARLES W. WILLARD, Westerly, *President*.

DANIEL B. FEARING, A. M., Newport, *Vice President*.

WILLIAM H. BOARDMAN, Central Falls, *Secretary*.

ADELBERT D. ROBERTS, Woonsocket, *Auditor*.

THEOPHILE GUERIN, Woonsocket, *Treasurer*.

WILLIAM P. MORTON, Providence.

ISAAC H. CLARKE, Jamestown.

LOBSTER DEPUTIES.

WILLIAM T. LUTH, Newport, *Chief Deputy*.

JAMES HARRINGTON, Newport.

JEREMIAH B. ALLEN, New Shoreham.

ANDREW V. WILLIS, New Shoreham.

SUPERINTENDENT OF HATCHERY AND EXPERIMENT STATION.

EARNEST W. BARNES, Wickford.

REPORT

To the Honorable the General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1915:

The Commissioners of Inland Fisheries herewith, present their forty-fifth annual report, for the year 1914, which contains, as required by law, data and statistics with respect to the fisheries under their jurisdiction and such recommendations as they deem expedient.

FISHERIES.

During the past year the fisheries in general have been in as prosperous condition as could be expected considering the great demands which an extensive fishing industry have placed upon them during the last quarter of a century. An account of the deep-sea fishing off Newport is one of the special topics taken up in the report and tables are also given of the shipments of fish and lobsters.

FRESH-WATER PONDS AND STREAMS.

In connection with the care of the fresh-water ponds and streams of the state, your Commissioners have, during the past year, begun the introduction, into the waters of the state, of several species of food and game fish, new to our waters, but which, judging from the experiments which have been made by the Commissioners of other states, would seem well adapted to conditions within this state. Among those introduced are the Montana grayling, the Pennsylvania bluegill and the Von Behr or brown trout. Detailed information regarding these fish will be given in the body of the report.

TUNA.

The interest in sea-angling for the tuna, in Rhode Island waters, more especially near Block Island, has, largely owing to the work of your Commission, increased to such an extent that the Atlantic Tuna Club has been organized and incorporated under the laws of this state. The membership of this club has started with nearly one hundred leading fishermen from all parts of the country, and is growing rapidly. It seems reasonable to expect a large increase in the business of the Block Island hotels, merchants and boatmen through the influence of the members of this club.

WICKFORD HATCHERY.

The buildings, floats, machinery and other apparatus comprising the plant for lobster hatching and rearing have been properly cared for during the past season and are now in a most satisfactory state of repair and efficiency. This condition is largely owing to substantial improvements which were made during the previous year and which should result in greater economy in operation. The output of young lobsters has shown a fair increase over previous years.

The appropriation for the purchase of land adjoining the state fishery station at Wickford, which was authorized at the last session of the General Assembly, has enabled your Commission to acquire sufficient land to fill the long felt needs of the station. Already improvements have been made upon the land which will aid materially in the efficient and economic operation of the plant. Your Commission urgently advises the further appropriation of a sum, not to exceed one hundred dollars, in order that a suitable right of way to this property may be obtained.

FISHERY LAWS NEED REVISION.

As mentioned in previous reports there is great need of a thorough and careful revision of the general fishery laws in order to remove many that are obsolete and to correct and revise such as are found to be ambiguous or conflicting. Your Commission recommends

that your Honorable Body authorize the drafting of the necessary changes above referred to so that they may be presented for your approval.

The work of the Commission has followed the usual lines as outlined below, more detailed statements will be found in the body of the report.

The stocking of fresh-water ponds and streams.

The enforcement of the laws relating to fresh-water fishes.

The purchase of egg-bearing lobsters.

The employment of deputies to enforce the lobster laws.

The granting of licenses to catch lobsters.

The rearing of lobsters to the bottom-seeking stages.

The gathering of data and statistics with respect to the food-fishes.

The coöperation with fisheries authorities of neighboring states and abroad.

Occasion is here taken to thank the New York, New Haven and Hartford Railroad Company for its courtesy in granting free transportation of fry and messengers.

The financial statement for the year 1914 is as follows:

State of Rhode Island in account with the Commissioners of Inland

Fisheries.

1914.

DEBIT.

Dec. 31.	To expenses of the Commissioners from January 1 to December 31, 1914.	\$921 67
	To expenses and services of deputies under the lobster law from January 1 to Decem- ber 31, 1914.	3,626 35
	To expenses at the Wickford hatchery and Experiment Station, January 1 to Decem- ber 31, 1914.	8,258 02
	To purchase of egg lobsters.	1,606 64
	To purchase of fresh-water fishes.	810 49
		<hr/>
		\$15,223 17

CREDIT.

1914.

Dec. 31. By received from the State Treasurer. \$15,223 17

Amount received for 345 lobster licenses, at \$5.00 each,
as per receipts from the State Treasurer. . . \$1,725 00

Respectfully submitted,

CHARLES W. WILLARD,
DANIEL B. FEARING,
WILLIAM H. BOARDMAN, *Secretary*,
ADELBERT D. ROBERTS,
THEOPHILE GUERIN,
WILLIAM P. MORTON,
ISAAC H. CLARKE.

STOCKING FRESH-WATER PONDS AND STREAMS.

In spite of the low state of the ponds and streams throughout the state, the fishing, in 1914, in waters previously stocked by your Commission, was quite successful. Of special prominence is the rapid increase in the number of *black bass* in those streams and ponds which have been previously stocked. In one large pond in the southern part of the state where formerly the small mouth species greatly predominated, nearly one-half of the number now caught are large mouth. The superior rate of growth and equality as a food fish has made the large mouth very desirable for the majority of our ponds and streams.

This past year, as in the two or three years previous, great care had to be taken in the distribution of *trout* to select suitable places as the low state of the water and extensive deforestation had rendered many formerly good streams unfit. In the latter part of the year, however, since conditions had improved somewhat, a considerable number of fingerlings were liberated.

In addition to the usual varieties of fish, your Commission has begun the introduction of several species new to our waters. Among these are the Pennsylvania bluegill, the brown trout and the Montana graylings. Inasmuch as these fish are new, certain data with respect to their life history and habits are given.

BROWN TROUT (*Salmo fario* Linn).

The brown trout, also known as the "von Behr trout" or, "German trout," is the common brook trout of Europe and is said to have been introduced into this country from Germany as early as 1883. Since this time it has become well established in many states.

Although it thrives in clear, cold, rapid streams, it readily adapts itself to a much higher temperature than our brook trout, and it is therefore our belief that it will be a good addition to such streams as were formerly excellent trout streams, but have become low and warm through deforestation.

The brown trout may be readily distinguished from our common brook trout by the presence of spots on the back instead of wavy markings. It has been known, under very favorable conditions, to reach a length of thirty five inches and a weight of twelve pounds, but five or six pounds is a very good average.

It becomes mature when about two years of age and may live to be over fifteen. The flesh is very digestible and nutritious and is of varying degrees of red depending upon local conditions.

In movements it is swift and will leap over obstructions like the salmon. During the middle of the day it reposes quietly in deep pools or shadow of overhanging bows and ventures out in the evening and early morning. The best season for capture is from May to September.

"The species has long been known as one of the noblest of the game fishes and its adaptability for capture with artificial flies, because of its feeding habits, is well understood."

A consignment of 20,000 brown trout eggs were received by the Commission this past year from the Pennsylvania State Fish Commissioner, N. R. Buller. A very large proportion of these hatched and about 15,000 fry, from 4 to 5 inches long, were recently distributed.

It has sometimes been contended that it will drive out the speckled trout, but as the following instance indicates, both may thrive in the same water. In this lake, in the early part of the season when the water is chilly the common brook trout greatly predominates, but when the water warms up the brown trout is caught almost exclusively. It is not improbable that in those places where the brook trout seems to have been driven out by the brown trout, changing conditions, such as warmer water and absence of shade, have rendered the streams unfit for the common form.

PENNSYLVANIA BLUEGILL (*Lepomis pallidus* Mitchill).

Through the courtesy of the Pennsylvania Fish Commissioner, N. R. Buller, the Commissioners obtained one hundred adult bluegills. Part of these are being held at Carolina in a small retaining

pond and the remainder were put in a small lake at Wilcox Park, Westerly. After these spawn it is proposed to distribute the young in such waters as are well adapted for them. The bluegill is a popular pan fish, larger than the pumpkinseed and better adapted to many of our streams. The following account is given of its life history and habits.

The bluegill, also called the "blue bream" or "blue sunfish," is the best known and most important of the sunfishes. It is very widely distributed, its geographical range extending from the Great Lakes south through the Mississippi Valley to Florida and the Rio Grande. Throughout this range it is found in nearly all lakes, ponds and quiet streams, but it is more abundant in the larger lakes.

As a food fish it is of considerable importance, often bringing a good price in the markets. Its flesh is firm and flakey, with a delicious flavor and "among fresh-water fishes is excelled by the yellow perch only."

As a game fish it is not to be despised. While easily hooked it makes a most vigorous fight to the end "with a persistence and viciousness which makes the bluegill the gamiest fish of its size." It may be taken at any time during the year, even through the ice, but from early July to September is the best. It will take any sort of bait or tackle from angleworms and grasshoppers to artificial flies and small trolling spoons.

The bluegill is somewhat larger than the ordinary sunfish and reaches a length of from twelve to fourteen inches and a maximum weight of a pound and a half, but this size is unusual.

MONTANA GRAYLING (*Thymallus montanus Milner*).

A small consignment of these beautiful fish, ranging from five to six inches in length, were received through the courtesy of the New York Aquarium and are now being raised at Carolina under the care of the American Fish Culture Company. As soon as they have reached the proper size to reproduce it is proposed to introduce the fry into such streams in our state as appear to be suitable.

Originally existing only in the head streams of the Missouri River, the Montana grayling prefers cold clear streams of pure water with sandy and gravelly bottoms. It grows to a length of 20 inches and a weight of two pounds, but the average length is ten to twelve inches and a weight of from a pound to a pound and a half. It is fairly prolific, one fish producing from 2,000 to 4,000 eggs. At the spawning period it will migrate long distances if necessary to find suitable spawning grounds. It spawns from April to May, depending on the temperature.

As a game fish it is the equal and in some respects superior to the brook trout and puts up a good fight, often leaping above the surface when hooked. It will rise repeatedly to the same fly if missed at the first cast. In contradistinction to the trout it will, when in deep pools, lie out in plain sight in schools. It will take artificial flies, caddis larvæ, grasshoppers, angle worms and similar bait. Small flies should be used. (Nos. 10 to 12.) It can be taken from May to September, but summer is the best time.

THE COLLECTION OF DATA AND STATISTICS RELATING TO THE COMMERCIAL FISHERIES.

As mentioned in previous reports, every effort has been made to make this branch of the Commission's work reliable and trustworthy, but the absence of laws making returns compulsory has prevented us from making this data complete.

GENERAL CONDITIONS OF THE FISHERIES IN 1914.

The fishing in Narragansett Bay in 1914 was, in general, no better than the previous year. The presence within the Bay in the late fall of numbers of small mackerel was about the only thing worthy of note. Handline fishing within the Bay was poor. Off Newport it was very good, especially the tautog fishing. The first tautog was caught with a handline on April 29. Rod and reel fishing off

Block Island attracted considerable attention. Bluefish and tuna were quite abundant and afforded excellent sport.

The stub trap fishing within the Bay was in general a failure. Off-shore the fishing was quite good, although prevailing prices were low.

The following tables of the shipment of sea products from Newport are submitted as heretofore. There was a marked increase in the number of barrels of fish over the preceding year which was due to big runs of scup and mackerel.

TABLE I.

Showing the Amount of Fish, Lobsters, and Other Sea Products Shipped Monthly from Newport by the Principal Transportation Companies During the Year 1914.

1914.	Barrels of Fish.	Barrels of Lobsters.	Other Sea Products.
January.....	2,196		475
February.....	2,456		368
March.....	4,862		323
April.....	2,449	13	274
May.....	11,472	86	60
June.....	24,239	220	27
July.....	4,557	587	17
August.....	3,632	639	36
September.....	7,014	484	414
October.....	5,928	59	626
November.....	3,947	15	197
December.....	1,830		384
Total, 1914.....	74,582	2,103	3,201

TABLE II.

Table Showing Shipment of Fish, Lobsters, and Other Sea Products from Newport Every Fifth Year Since 1889.

	Barrels of Fish.	Barrels of Lobsters.	Barrels of Other Sea Products.
1889.....	19,306	2,047
1894.....	17,769	2,392
1899.....	35,079	4,143
1904.....	62,996	1,921	52
1909.....	46,124	3,252	861
1914.....	74,528	2,103	3,201

THE LOBSTER INDUSTRY.

The total number of lobsters caught in Rhode Island waters in 1914 was 1,037,552, which was about 200,000 pounds less than that of 1913. It should not be concluded from this that the supply of lobsters in Rhode Island is decreasing. Severe storms which destroyed a large amount of gear occurred in the early part of the summer at the time when the "school lobsters strike in," when usually some of the best catches are made. An increasing number of small lobsters were reported, which looks favorable for the next two or three years at least.

The following tables have been compiled from data furnished by William T. Luth, Chief Lobster Deputy. At the conclusion of these a list of the licensed lobstermen is given as prescribed by law.

TABLE III.

Table Comparing the Number of Pounds of Lobsters, Number of Pots, and Average Number of Pounds Per Pot, for the Years 1910-1914.

YEAR.	Total Catch.	Catch at Newport.	Number Pots.	Average Number Pounds Per Pot.
1910.....	833,683	489,815	22,091	37
1911.....	891,886	513,076	23,394	38
1912.....	745,257	372,726	17,259	43
1913.....	1,210,094	520,962	17,335	69
1914.....	1,037,552	488,025	23,122	44

TABLE IV.

Number of Pounds of Lobsters Handled by the Principal Markets in Rhode Island for the Years 1910-1914.

FISH MARKETS.	1910.	1911.	1912.	1913.	1914.
Newport (wholesale).....	351,675	390,702	219,076	332,362	322,709
Newport (retail).....	148,140	132,374	153,650	188,600	165,316
Sakonnet (wholesale).....	67,038	63,000	55,618	51,779	32,081
Tiverton (wholesale).....	60,785	84,000	49,043	61,353	45,296
Block Island (wholesale).....	160,300	159,000	196,000	376,000	250,000
Point Judith (wholesale).....	54,800	92,810	71,870	100,000	122,150
Watch Hill (wholesale).....					
Narragansett Pier (wholesale).....					
Other markets.....				100,000	100,000
Total.....	842,738	921,886	745,257	1,210,094	1,037,552

TABLE V.

Number of Pots, Boats and Men Engaged in Lobster Fishing in Rhode Island in 1914.

LOCATION.	Men.	Boats.	Pots.
Block Island.....	81	48	7,000
Bristol.....	7	5	430
Charlestown.....	4	3	115
Hamilton.....	2	2	120
Jamestown.....	17	13	740
Little Compton.....	8	8	332
Middletown.....	7	7	380
Narragansett Pier.....	31	28	1,989
Newport.....	112	101	7,950
Portsmouth.....	7	5	260
Prudence Island.....	7	5	540
Saunderstown.....	7	5	295
Tiverton.....	9	9	410
Wakefield.....	16	10	889
Warren.....	3	2	310
Westerly.....	17	12	1,005
Wickford.....	1	1	25
*Other Places.....	9	6	332
Total.....	345	270	23,122

*In addition to these a few boats fish just beyond the three-mile limit. The bulk of their lobsters are brought into Rhode Island.

List of Lobster Licenses Granted in 1914.

License No.	Name.	Location.
1.	Joseph L. Eaton.....	Saunderstown.
2.	Joseph L. Eaton, Jr.....	"
3.	Henry K. Littlefield.....	Block Island.
4.	Victor D. Gray.....	Tiverton.
5.	Samuel E. Gray.....	"
6.	William H. Dodge.....	Block Island.
7.	Louis E. Smith.....	"
8.	Earle A. Smith.....	"
9.	Charles O'Connor.....	Providence.
10.	Arthur E. Dodge.....	Block Island.
11.	Prentice A. Lanphear.....	Westerly.
12.	Wilbur E. Dodge.....	Block Island.
13.	Benjamin Smith.....	"
15.	Albert W. Smith.....	"
16.	George E. Smith.....	"
17.	Simon A. Littlefield.....	"
18.	Alfred C. Littlefield.....	"
19.	Samuel R. Littlefield, 2d.....	"
21.	John R. Littlefield.....	"
22.	Rouse B. Dodge.....	"
24.	Simeon A. Ball.....	"
25.	Venie Willis.....	"
26.	Johannes Jacobson.....	"
27.	Henry T. Mitchell.....	"
28.	John F. Peabody, Jr.....	Middletown.
29.	Albert E. Jones.....	Newport.
30.	Howard Fisher.....	Block Island.
33.	George Trunejes.....	Newport.
35.	Curtis H. Sprague.....	Block Island.
36.	Samuel B. Dickens.....	"
37.	Owen L. Mitchell.....	"
38.	Albert S. Hayes.....	"

License No.	Name.	Location.
39.	Edgar Littlefield.	Block Island.
41.	Smith Sprague.	"
43.	Albert L. Anderson.	"
44.	Herbert Greenwood.	Watch Hill.
45.	Gust Anderson.	Block Island.
46.	John A. Anderson.	"
47.	William N. Ball.	"
49.	James Karpetis.	Newport.
50.	Elmer Babcock.	Wakefield.
51.	J. Victor Currie.	Westerly.
52.	Alvah S. Boyd.	Newport.
53.	Stannos Janitos.	"
54.	Park A. Slate.	Block Island.
56.	Ralph E. Dodge.	"
57.	William P. Dodge.	"
58.	Edward Evensen.	"
59.	Dimitrios Kodilis.	Newport.
60.	Millard F. Mitchell.	Block Island.
62.	Irving M. Ball.	"
63.	Thaddeus A. Ball.	"
64.	Chester A. Littlefield.	"
65.	Walter R. Littlefield.	"
66.	Harold L. Dunn.	"
67.	Stanton C. Allen.	"
68.	Emery A. Dickens.	"
69.	Joshua Smith.	"
70.	Ulysses E. Wescott.	"
72.	Elezar Allen.	"
73.	Parker Mitchell.	"
74.	Ezra B. Dunn.	"
76.	John F. Hayes.	"
77.	Amanuel Allen.	"
78.	Apostolis Fisis.	Newport.

License No.	Name.	Location.
79.	Roswell Mitchell.....	Block Island.
80.	Carder H. Champlin.....	Narragansett Pier.
81.	Nicholas Skapanakes.....	Newport.
82.	Lyman Hall.....	Westerly.
84.	Richard Steadman.....	Block Island.
85.	Silas C. Hall.....	"
86.	Charles A. Hall.....	"
87.	Frank M. Gross.....	Prudence Island.
88.	Dimitrios Damascus.....	Newport.
89.	George Stamatas.....	"
90.	Oscar T. Dykstra.....	Wakefield.
91.	Adrian Dykstra.....	"
92.	Bernal H. Dodge.....	Block Island.
93.	John A. Pape.....	Newport.
95.	Andrew J. Tew.....	"
96.	Eugene A. Tew.....	"
97.	Edward Roy.....	"
98.	Stamatios Stamatas.....	"
99.	Peter Andrews.....	"
101.	Perikles Booras.....	"
102.	John Conisotas.....	"
103.	Raftakis Raftakis.....	"
104.	Restcom E. Peabody.....	Middletown.
105.	Bock Anderson.....	"
106.	Daniel A. Jordan.....	Apponaug.
109.	Harry G. Violet.....	Newport.
110.	Gordon Bliven.....	"
111.	John H. Sherman.....	Jamestown.
112.	Jerome T. Blount.....	Newport.
113.	James P. Hennessey.....	Peacedale.
114.	John Johnson.....	Newport.
115.	James F. Sullivan.....	"
116.	R. G. Burdick.....	Narragansett Pier.

License No.	Name.	Location.
117.	John Townsend.....	Bristol.
118.	George W. Gardner.....	Jamestown.
119.	Nicholas Trocotas.....	Newport.
120.	George Lathrop.....	Prudence Island.
121.	George A. Carpenter.....	Saunderstown.
122.	R. R. Matterson.....	"
123.	Manuel Brazil, Jr.....	Jamestown.
124.	Archie C. H. Matterson.....	Saunderstown.
125.	George Frank.....	Narragansett Pier.
126.	Ernest Littlefield.....	Jamestown.
127.	Thomas F. Nickerson.....	Little Compton.
128.	Linus E. Dodge.....	Block Island.
129.	Constantine Mataronas.....	Newport.
130.	Edgar F. Grinnell.....	"
131.	Anastacio Angelo.....	"
132.	Amasa S. Johnson.....	Jamestown.
133.	W. H. Fiddler, Jr.....	Newport.
134.	Nicholas Julius.....	"
135.	Lazarus Brown.....	"
136.	Nicholas Mataronas.....	"
137.	Stamos Domotaris.....	"
138.	Vasilas Hanos.....	"
139.	Frank Parlenas.....	"
142.	Clarence Jacobs.....	Block Island.
143.	George Prokopios.....	Newport.
144.	Mark J. Violet.....	"
145.	Demitra Raptacis.....	"
146.	Richard E. Currie.....	Charlestown.
147.	James Virgines.....	Newport.
149.	Gustave H. Damask.....	"
150.	Edward N. Lawton.....	"
151.	Nicholas K. Card.....	"
152.	Henry C. Bush.....	Bristol.

License No.	Name.	Location.
153.	Demetrios Giones.....	Newport.
155.	B. A. Kinnecom.....	Narragansett Pier.
156.	Constantine Conomus.....	Newport.
157.	Ernest F. Dickens.....	Block Island.
158.	George O. Fitzgerald.....	Wakefield.
159.	Angelo J. Palmer.....	Newport.
161.	Angelo Maniotis.....	"
162.	William Holt.....	"
163.	George I. Hargraves.....	Narragansett Pier.
164.	George S. Johnston.....	Block Island.
165.	Stamos Salonikas.....	Newport.
166.	Manuel S. De Terra.....	Jamestown.
167.	Francis A. Dowd.....	Newport.
169.	Roland E. Crowell.....	Conimicut.
170.	Walter Chace.....	Newport.
171.	Nicholas Martin.....	"
172.	William H. James*.....	"
173.	Vito Navari.....	"
174.	Joe F. Rosa.....	Jamestown.
175.	Domotaris Domotaris.....	Newport.
176.	E. E. McQuaide.....	Westerly.
178.	Jesse E. Crowell.....	Prudence Island.
179.	Manuel Kristodolo.....	Bristol.
180.	Herbert A. Warner.....	"
181.	Marcus L. Huftalen.....	Warren.
182.	Fotis Tregonis.....	Newport.
183.	William C. Allen.....	Narragansett Pier.
185.	Edward E. Littlefield.....	Block Island.
187.	Oder S. Dunn.....	"
189.	Willis E. Clark.....	Narragansett Pier.
190.	Oliver A. Rose.....	Block Island.
191.	Fred C. Albro.....	Newport.

*License revoked.

License No.	Name.	Location.
193.	Irving T. Wilcox.....	Tiverton.
194.	Earl C. Clark.....	Narragansett Pier.
196.	Everett A. Willis.....	Block Island.
197.	Hiram C. Matterson.....	Narragansett Pier.
198.	John H. Sprague.....	Block Island.
199.	Manuel Jacobs.....	"
200.	Edwin D. Montross.....	Bristol.
201.	Langworthy H. Pearce, Jr.....	Narragansett Pier.
202.	William H. Boyd.....	Newport.
204.	H. Hillyer Burdick.....	Narragansett Pier.
205.	Walter H. Munro.....	Warren.
206.	Arthur Damascus.....	Newport.
207.	Joseph F. Winter.....	Narragansett Pier.
208.	Charles H. Albro.....	Newport.
209.	Walter Smith.....	Narragansett Pier.
210.	Fred B. Tucker.....	"
213.	Jared W. Minor.....	Prudence Island.
214.	Manuel Silveria.....	Little Compton.
215.	Frank Brown.....	"
216.	Lincoln R. Wilbour.....	Little Compton.
217.	V. W. Sprague.....	Block Island.
218.	Ernest E. Streeter.....	Wakefield.
219.	S. D. Hunt.....	Westerly.
220.	S. E. Larkin.....	"
221.	Freeman Millikin.....	Block Island.
222.	Langworthy H. Pearce.....	Saunderstown.
223.	Edward Jansen.....	Newport.
224.	George P. Gardner.....	Wakefield.
225.	James Driscoll.....	Newport.
226.	William H. Brown.....	Portsmouth.
228.	John Taylor.....	Jamestown.
231.	Antonio R. Medeiros.....	Middletown.
232.	James H. Scott.....	Jamestown.

License No.	Name.	Location.
233.	John G. Sousa.....	Middletown.
234.	Thomas Mann.....	Narragansett Pier.
235.	Procopios Mataronas.....	Newport.
236.	George Mataronas.....	"
237.	Lawrence Gross.....	"
238.	Stevens Protopapas.....	"
239.	Robert P. Hall.....	Westerly.
240.	George M. Nye.....	"
241.	Elvin M. Scott.....	"
242.	George L. Payne.....	Block Island.
243.	Joseph Pomelek.....	Newport.
245.	Horace E. Sisson.....	Westerly.
246.	Asahel Larkin.....	"
248.	John E. Tillman.....	Pawtuxet.
249.	Thomas T. Saunders.....	Westerly.
251.	Charles Gross.....	Newport.
252.	John E. Rose.....	Block Island.
253.	John McDonald.....	Newport.
254.	John Espanolia.....	"
255.	John E. Dodge.....	Block Island.
257.	Jacob Anderegg.....	Newport.
260.	Edward M. Slate.....	Block Island.
261.	Fred Slate.....	"
262.	Harry S. Champlin.....	Narragansett Pier.
263.	Reuben Kenney.....	"
264.	Thomas W. Rhodes.....	"
265.	Joshua G. Champlin.....	"
267.	Alvin O. Gould.....	"
268.	Ottowell S. Dodge.....	Block Island.
269.	Constantine D. Damaskas.....	Newport.
270.	Horace Tucker.....	Wakefield.
271.	William Mohr.....	Newport.
272.	Conrad Seibel.....	Tiverton.

License No.	Name.	Location.
273.	Henry C. Johnson, 2d.	Hamilton.
274.	Manuel Mello.	Little Compton.
276.	Frank W. Johnson.	Hamilton.
277.	John S. Petritis.	Jamestown.
278.	Constantine Frank.	Narragansett Pier.
279.	Peter Goudy.	Newport.
280.	Alfred A. Peckham.	Tiverton.
281.	George A. Martin.	Newport.
282.	John Mustacas.	"
283.	John Sarris.	"
284.	Ellis B. Wilbour.	Little Compton.
285.	William F. Freeborn.	Portsmouth.
286.	Leman Wardsworth.	Wickford.
287.	Charles W. Cowles.	Newport.
291.	Willard F. Borden.	Tiverton.
292.	Clarence H. King.	Jamestown.
293.	John A. James.	Newport.
295.	Nicholas Batlis.	"
296.	Martin Thompson.	Prudence Island.
297.	Marcus M. Wilcox.	Tiverton.
300.	George E. Harris.	Newport.
301.	Manuel Silva.	Jamestown.
305.	H. M. Barnaby.	Narragansett Pier.
307.	Frank Matoes.	Jamestown.
309.	Bernard Murphy.	Newport.
310.	Jack M. Neronka.	Jamestown.
311.	William F. Kennedy.	Wakefield.
312.	Joseph Jefferson.	Providence.
313.	William P. Briggs.	Narragansett Pier.
314.	H. J. Palmer.	Newport.
316.	Joshua F. Clarke.	Narragansett Pier.
317.	Harry D. Clarke.	"
318.	John M. Brownell.	Portsmouth.

License No.	Name.	Location.
319.	Ernest Wilbour.....	Little Compton.
320.	Horace S. Webster.....	Wakefield.
321.	Nicholas Petritis.....	Jamestown.
323.	William E. Smith.....	Oakland Beach.
324.	Herbert Wilcox.....	Charlestown.
325.	Howard P. Wilcox.....	"
326.	Stephen C. Peckham.....	"
327.	George Grimes.....	Block Island.
328.	Aubrey S. Dunn.....	"
329.	Percy R. Brownell.....	Portsmouth.
330.	Thomas P. George.....	Jamestown.
331.	James Mataronas.....	Newport.
332.	Anthony Axiotes.....	"
333.	Jacques A. Biastre.....	"
334.	Cleveland H. Clarke.....	Westerly.
335.	John N. Dodge.....	Block Island.
339.	John Vreira.....	Middletown.
340.	Ebenezer Crowell.....	Conimicut.
341.	Anastaso D. Vulgares.....	Newport.
342.	John Harrington.....	"
344.	Patrick H. Dillon.....	Wakefield.
345.	Frank Steele.....	Newport.
346.	William Littlefield.....	Block Island.
347.	Sidney C. Thomas.....	Portsmouth.
348.	L. C. Luth.....	Newport.
349.	Charles E. Larkin.....	Westerly.
351.	George G. Douglass.....	Block Island.
353.	Louis Adams.....	Newport.
355.	Joseph A. Silva.....	Bristol.
357.	Walter S. H. Bliven.....	Newport.
358.	Maurice T. Fleetwood.....	"
359.	Arthur W. H. Wilkie.....	Prudence Island.
360.	Edwin W. Nash.....	Watch Hill.

License No.	Name.	Location.
361.	William S. Webster.....	Wakefield.
362.	William H. Rhodes.....	"
363.	Lycurgus G. Negus.....	Block Island.
364.	Manuel Ramos.....	Middletown.
366.	Royal B. Tingley.....	Narragansett Pier.
368.	Odessas Booras.....	Newport.
369.	William Christiansen.....	Gooseberry Island.
370.	Peter Palmer.....	Newport.
371.	Thomas Kristodolo.....	Bristol.
372.	Charles B. Albro.....	Prudence Island.
373.	Nick Kiousis.....	Newport.
374.	Edward A. Fitzgerald.....	Wakefield.
375.	Anastaso Salonikas.....	Newport.
377.	Anthony Constantine.....	"
378.	Edward M. Harvey.....	Portsmouth.
379.	Ernest Audrea.....	Newport.
381.	William H. Dickerson.....	Warren.
382.	Alton H. Negus.....	Tiverton.
386.	Leon M. Champlin.....	Narragansett Pier.
388.	Christian T. Luth.....	Newport.
389.	James Collins.....	"
390.	John Tourgee.....	Block Island.
396.	Horace K. Webster.....	Wakefield.
397.	Siderys Siderys.....	Newport.
398.	James E. Dewey.....	Block Island.
401.	George L. Hoxsie.....	Newport.
402.	Pahtelis Petritis.....	Jamestown.
403.	Math Baker.....	Newport.
405.	Daniel W. Lasell.....	Narragansett Pier.
407.	Louis Miller.....	Saunderstown.
408.	James S. Skapinkis.....	Newport.
409.	Benjamin T. Rogers.....	"
410.	John Coffinas.....	"

License No.	Name.	Location.
411.	Arthur Vatikitocs.....	Newport.
412.	Manuel F. Silvia.....	"
413.	August Weber.....	"
414.	Ralph Champlin.....	Westerly.
416.	Erik Gustafson.....	Newport.
417.	Norman Brownell.....	Portsmouth.
418.	Leroy C. Wilbour.....	Little Compton.
419.	Henry Bannister, Jr.....	Peacedale.
420.	Raul Sheffield.....	Block Island.
421.	Alfred J. Gross.....	Newport.
422.	E. A. Larkin.....	Wakefield.
423.	J. R. Larkin.....	"
424.	Josephine L. Towle.....	"
425.	Anest Vatikitocs.....	Newport.
426.	Victor I. Miller.....	Providence.
427.	Gardner T. Caswell.....	Wakefield.
428.	Bert Slate.....	Block Island.

FISH-TRAPS SET IN RHODE ISLAND WATERS.

As will be seen from the accompanying tables the number of fish traps have been slowly decreasing.

TABLE VI.

Fish Traps Set in Rhode Island Waters in 1914.

Providence River.....	8
Greenwich Bay.....	13
West Passage.....	15
Mount Hope Bay.....	12
Sakonnet River.....	90
East Passage.....	20
Off Shore.....	68
Block Island.....	11
Watch Hill.....	15
Total.....	252

TABLE VII.

Total Number of Traps Set Each Year Since 1898.

1898.....	119	1906.....	249
1899.....	121	1907.....	271
1900.....	135	1908.....	271
1901.....	151	1909.....	277
1902.....	161	1910.....	283
1903.....	195	1911.....	277
1904.....	220	1912.....	261
1905.....	240	1913.....	267
1914.....	252		

DEEP WATER FISHING OFF NEWPORT IN 1914.

The deep water fishing off Newport in 1914 was somewhat above the average. Of special prominence may be mentioned the scup fishing, whose annual yields do not seem to be effected by the quantity of fish taken each year, and also worthy of special mention was the large number of small mackerel. As early as April 2nd deep water traps were put in near Point Judith, but owing to the rough weather it was not until April 22nd that the first off-shore trap was set near Newport. The usual rough weather was experienced in the early part of the season, but nothing of any consequence. The last of the big scup traps were taken up July 25th.

SCUP (*Stenotomus chrysops*).—The first scup to arrive in New York City in 1914 came from Ocean City, Maryland, on April 24th. The first caught in Rhode Island waters were taken in traps off Point Judith on April 28th, and consisted of a single specimen. This was fully two weeks later than the first catch in 1913, and as the traps had been set over three weeks earlier (April 2nd) it may be considered as about the first scup to arrive in this vicinity. April 30, a single scup was caught near Newport. The catch of scup from this time on increased slowly until May 6, when a catch of 500 pounds was made off Point Judith, and the following day the boats fishing off Newport brought in two or three barrels each. By May 10 more than 100 barrels a day were being brought into Newport. The quantities

of scup now increased quite rapidly and the price becoming low the usual empounding began about May 21. On June 9th, a catch of 40 barrels of large scup was made, although the run of large scup was supposed to have passed. Continued good catches were made until July 1, when the scup season ended, subsequent shipments being made from the pounds. In Table VIII on page 31 of this report will be found a calendar of the scup seasons for the past five years.

MACKEREL (*Scomber scombrus*).—The mackerel season on our Atlantic Coast, in 1914 began at Chincoteague, Virginia, about April 17. The first caught in local waters were taken at Point Judith on April 25th, three days ahead of the scup, which is quite unusual. May 2nd, the first mackerel were taken in the traps near Newport. The real season opened about May 16, on which date 1,200 mackerel were brought into Newport. The number of mackerel in this vicinity was greater in 1914 than at any time of which we have record. On June the 12th 2,600 barrels were landed at Newport and because of the continued arrival of quantities of the fish the fishermen resorted to splitting and salting them, working day and night. It is said that this is the "first time on record that mackerel have been split in a regular shipping port." While there were some catches of large fish, the average run was small, but this was more than compensated for by the great number and the length of the run which continued throughout the summer, and even in the late fall mackerel were taken as far up in the Bay as East Greenwich. (See Table IX, page 31 for a calendar of the mackerel seasons for the last five years.)

SQUITEAGUE (*Cynoscion regalis*).—Very few weakfish were caught in the traps off Newport in 1914. Their first appearance was reported on May 27. The best catches were made in the latter part of June.

BUTTERFISH (*Poronotus tricanthus*).—May 1st was the first reported catch of butterfish. No large catches of market-sized ones were made during the season, although large quantities of small ones were present all summer.

STRIPED BASS (*Roccus lineatus*).—The first catch of striped bass was made on May 4th, off Point Judith. In the traps near Newport, the first ones were taken on May 7th. Occasional good catches were made throughout the summer, and some extra large hauls in the latter part of October.

SEA BASS (*Centropristes striatus*).—The first of these fish were taken in the traps on May 7th, and by May 9th they were quite abundant.

SEA ROBINS (*Prionotus carolinus*).—The first catch of sea robins was on April 29th. They became plentiful about May 4th. No very large catches were made, however, although the number was somewhat greater than in 1913.

Squid.—These mollusks were first observed in the traps on April 30, and by May 18 they were quite abundant.

Swordfish were first brought into Newport June 29th, after which time they occupied the center of attraction for the remainder of the summer.

June 27, two *tuna*, the first of the season, were caught in the traps off Seal Rock.

June 30, the first Spanish mackerel was taken.

Several *salmon* were caught in the season of 1914. The first on May 7th. Ordinarily only one or two are taken each year.

The first reported catches of the various marketable fish in the traps off Newport is given below in Table X.

TABLE VIII.

Calendar of Scup Season off Newport, 1910-1914.

	1910.	1911.	1912.	1913.	1914.
First appearance.....	April 24.	April 26.	April 24.	April 14.	April 28.
Run commences.....	May 8.	May 12.	May 1.	April 25.	May 7.
Run ends.....	June 22.	June 20.	June 10.	June 18.	July 1.
Most abundant.....	May 13 to June 5.	May 14 to June 1.	May 14 to June 1.	April 29 to May 31.	May 10 to June 9.

TABLE IX.

Calendar of Mackerel Season off Newport, 1910-1914.

	1910.	1911.	1912.	1913.	1914.
First caught in trap.....	April 23.	May 6.	May 3.	April 28.	April 25.
First large shipment from Newport.....	May 16.	May 27.	May 22.	May 26.	May 16.
Most abundant.	May 16 to July 25.	May 27 to June 21.	May 22 to June 20.	May 26 to June 20.	May 16 to June 25.
Record day.....	June 10.	May 27.	June 12.	June 8.	June 12.
Season ends at Newport.....	Near end of July.	Near Aug. 1.	Near end of July.	July 29.	June 30.

TABLE X.

First Appearance of Various Marketable Fish in Traps off Newport, 1910-1914.

	1910.	1911.	1912.	1913.	1914.
Butterfish.....	April 22.	May 2.	May 21.	April 22.	May 1.
Horse-mackerel.....	July 16.	July 15.	July 18.	June 27.
King Fish.....	May 4.	May 13.	May 10.	May 6.	May 18.
Mackerel.....	April 23.	May 6.	May 3.	April 28.	April 25.
Sea Bass.....	May 1.	May 4.	April 30.	April 25.	May 7.
Sea Robins.....	April 21.	April 27.	April 24.	April 26.	April 29.
Scup.....	April 24.	April 26.	April 24.	April 14.	April 28.
Squid.....	April 20.	April 28.	May 1.	April 23.	May 3.
Squid-teague.....	April 9.	May 13.	May 13.	April 22.	May 7.
Striped Bass.....	April 20.	April 22.	April 24.	April 13.	May 4.

TUNA FISHING IN RHODE ISLAND WATERS.

The efforts of your Commissioners in exploiting the tuna fishing at Block Island have met with the most gratifying results. Wide publicity was gained through members of the leading yacht clubs, fishing organizations, and manufacturers and dealers in fishing tackle. Newspapers and sporting magazines were used to call the attention of sportsmen to this new field for anglers with deep sea inclinations and personal letters were mailed to lovers of the sport. The interest thus created brought a large number of people to Block Island who had never before visited this resort. Many of these fishermen tried the tuna fishing with varying results: some did not succeed in striking the fish, others returned from the fishing grounds with parted lines and broken rods as their only rewards. A goodly number however were fortunate in landing some fine specimens of tuna and all—even the unlucky ones—were satisfied that the fish were there and are looking forward to another outing during the season of 1915.

As an evidence of the popularity of the sport, a club was organized in December, under a Rhode Island charter. The membership of this club now numbers more than one hundred, among which number are the names of the leading yachtsmen and sportmen of the country. One of the members of your Commission was elected president of the club, one was made a director, and another is a member of an important committee. Several prominent business and professional men of the state were also elected to fill important offices. The club is named the Atlantic Tuna Club of Block Island. There is already a substantial sum in its treasury and the members are talking of a club house to be located on the island.

Your Commission believes that as a direct result of their efforts in this direction an increase in the revenue to the hotels, boatmen and business houses will accrue.

ENFORCEMENT OF STATE LAWS.

For the enforcement of the lobster laws in 1914 your Commissioners employed as in previous years four deputies. Two for the entire year

and two additional ones stationed in Block Island during the open season for catching lobsters.

The following prosecutions were made and fines imposed and paid under the lobster laws (the names of those fined are omitted):

Newport, July 11, 5 short lobsters.....	License Revoked.
Jamestown, August 19, 15 short lobsters.....	\$75 00
Providence, September 15, 12 short lobsters.....	60 00
Newport, September 21, 11 short lobsters.....	55 00
Providence, October 5, 4 short lobsters.....	20 00
Providence, October 10, 3 short lobsters.....	15 00

A number of deputies were employed in various sections of the state to enforce the laws relating to fresh-water fishes. These serve without compensation. It has been the policy of the Commission to prevent as much as possible the breaking of these laws by securing a large number of deputies rather than merely punish offenders. One prosecution was made:—

North Kingston, November 8, seining fresh-water pond, \$5.00 and costs.

The condition of the state laws relating to the general fisheries is very poor and convictions in many cases would be nearly impossible. It is the sincere desire of this Commission that at some early date these laws may be thoroughly overhauled.

BIOLOGICAL RECORDS.

Physical and biological records of various kinds have been continued at the Wickford Hatchery and Experiment Station.

AN EXHIBIT OF SEA FARMING.

The exhibit of marine and fresh-water fishes at the Washington County Fair, at Kingston, was continued in 1914, and was viewed by the usual crowds. A large tuna which was caught with rod and reel at Block Island was on exhibition and attracted considerable attention.

Many persons were in this way interested in tuna fishing and expressed their intention of trying them next summer. Live specimens of brown trout, Montana grayling and Pennsylvania bluegills, which are being introduced by the Commissioners, were also exhibited and judging from the questions asked concerning them their introduction is meeting with popular approval.

COÖPERATION WITH FISHERIES AUTHORITIES.

The meeting of the American Fisheries Society was attended by delegates from the Commission. Two members of the Commission were elected to important offices—president and treasurer.

In addition to this your Commission has been in touch with state and federal fisheries authorities. Among many courtesies received occasion is here taken to acknowledge the receipt of the following:—

20,000 Brown Trout eggs and 100 Adult Bluegills from the Pennsylvania Fish Commissioner, N. R. Buller.

A small consignment of Montana grayling from the New York Aquarium.

THE PROPAGATION OF LOBSTERS AT THE WICKFORD HATCAERY AND EXPERIMENT STATION.

The lobsters rearing at Wickford in 1914, was very successful. The number of lobsters reared exceeded the best previous output by over 100,000. All were in the latter part of the fourth or fifth stage. A slight addition was made to the rearing plant which we sincerely hope will enable us to pass the million mark next year. The hatching season did not open until the early part of June, and after the regular season closed in August a few egg lobsters continued to hatch their eggs until October, a very unusual thing.

TABLE XI.

Total Number of Fourth and Fifth Stage Lobsters Reared Each Year Since 1900.

YEAR.	Fourth Stage.	Fifth Stage.
1900.....	3,425	
1901.....	8,974	
1902.....	27,300	
1903.....	13,500	
1904.....	50,597	
1905.....	103,572	
1906.....	189,384	24,800
1907.....	294,896	4,900
1908.....	322,672	5,481
1909.....	178,542	
1910.....	511,274	28,372
1911.....	*299,042	
1912.....	*521,861	
1913.....	*469,344	
1914.....	*682,348	

*The entire number liberated were in the latter part of the fourth or fifth stage.

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-
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 2. MEAD, A. D. The Starfish. (Second paper.) Twenty-ninth Annual Report. 1899.
 3. TOWER, R. W. Improvements in the Methods of Preparation of Fish for Shipment. Twenty-ninth Annual Report. 1899.
 4. BUMPUS, H. C. The Extension of the Commercial Fisheries of the State. Twenty-ninth Annual Report. 1899.
 5. KELLOG, J. L. The Life History of the Common Clam. Twenty-ninth Annual Report. 1899.
 6. MASON, N. R. A List of the Diatoms Found in the Water over the Clam, Mussel, and Oyster Beds in Narragansett Bay. Thirtieth Annual Report. 1900.
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 19. HADLEY, P. B. Changes in Form and Color in Successive Stages of the American Lobster. Thirty-fifth Annual Report. 1905.
 20. EMMEL, V. E. The Regeneration of Lost Parts in the Lobster. Thirty-fifth Annual Report. 1905.
 21. TRACY, H. C. A List of the Fishes of Rhode Island. Plates I-XII. Thirty-sixth Annual Report. 1906.
 22. TRACY, H. C. The Common Fishes of the Herring Family. Plates VII-XII. Thirty-sixth Annual Report. 1906.

23. BARNES, E. W. Methods of Protecting and Propagating the Lobster, with a Brief Outline of its Natural History. Plates XIII-XXVI and XXVIII, XXXI, XXXII, XXXVI. Thirty-sixth Annual Report. 1906.
24. HADLEY, P. B. Regarding the Rate of Growth of the American Lobster. Plates XXVI-XXXVII, and XL. Thirty-sixth Annual Report. 1906.
25. HADLEY, P. B. Observations on Some Influences of Light upon the Larval and Early Adolescent Stage of *Homarus Americanus*. Plates XXXVIII-XL. Thirty-sixth Annual Report. 1906.
27. EMMEL, V. E. The Relation of Regeneration to the Molting Process in the Lobster. Plates XL-XLI. Thirty-sixth Annual Report. 1906.
28. TRACY, H. C. The Fishes of Rhode Island, III. The Fishes of the Mackerel Family. Thirty-seventh Annual Report, 1907.
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30. WILLIAMS, DR. LEONARD W. List of the Rhode Island Copepoda, Phyllopoda, and Ostracoda, with new species of Copepoda. Thirty-seventh Annual Report. 1907.
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32. WILLIAMS, L. W. The Stomach of the Lobster and the Food of Larval Lobsters. Thirty-seventh Annual Report. 1907.
33. HADLEY, P. B. Regarding the Behavior of the Larval and Early Adolescent Stages of the American Lobster. Thirty-seventh Annual Report. 1907.
34. BARNES, E. W. Lobster Culture at Wickford, Rhode Island, in 1906. Thirty-seventh Annual Report. 1907.
35. BARNES, E. W. Lobster Culture at Wickford, Rhode Island, in 1907. Thirty-eighth Annual Report. 1908.
36. TRACY, H. C. The Fishes of Rhode Island, V. The Flatfishes. Thirty-eighth Annual Report. 1908.
37. TRACY, H. C. The Fishes of Rhode Island, VI. A Description of two young Specimens of Squeteague (*Cynoscion regalis*), with Notes on the Rate of their Growth. Thirty-eighth Annual Report. 1908.
38. EMMEL, V. E. The Problem of Feeding in Artificial Lobster Culture. Thirty-eighth Annual Report. 1908.
39. TRACY, H. C. The Fishes of Rhode Island, VII. The Life History of the Common Eel. Thirty-ninth Annual Report. 1909.
40. SULLIVAN, W. E. Notes on the Crabs Found in Narragansett Bay. Thirty-ninth Annual Report. 1909.
41. MEAD, A. D. A Method of Fish Culture and of Transporting Live Fishes. Thirty-ninth Annual Report. 1909. (Paper Presented Before the Fourth International Fishery Congress, Washington, 1908.)
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43. TRACY, H. C. Annotated List of Fishes Known to Inhabit the Waters of Rhode Island. Fortieth Annual Report. 1910.
44. BARNES, E. W. Notes on the Spring and Summer Fishing in Deep Water off Newport During the Years 1905-1909. Fortieth Annual Report. 1910.
45. BARNES, E. W. The Plague of Sea Clams at Easton's Beach, Newport. Fortieth Annual Report. 1910.
46. HADLEY, P. B. Additional Notes Upon the Development of the Lobster. Fortieth Annual Report. 1910.
47. BARNES, E. W. Revised Edition of Methods of Protecting and Propagating the Lobster with a Brief Outline of its Natural History. Plates IV-XXIV. Forty-first Annual Report. 1911.





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